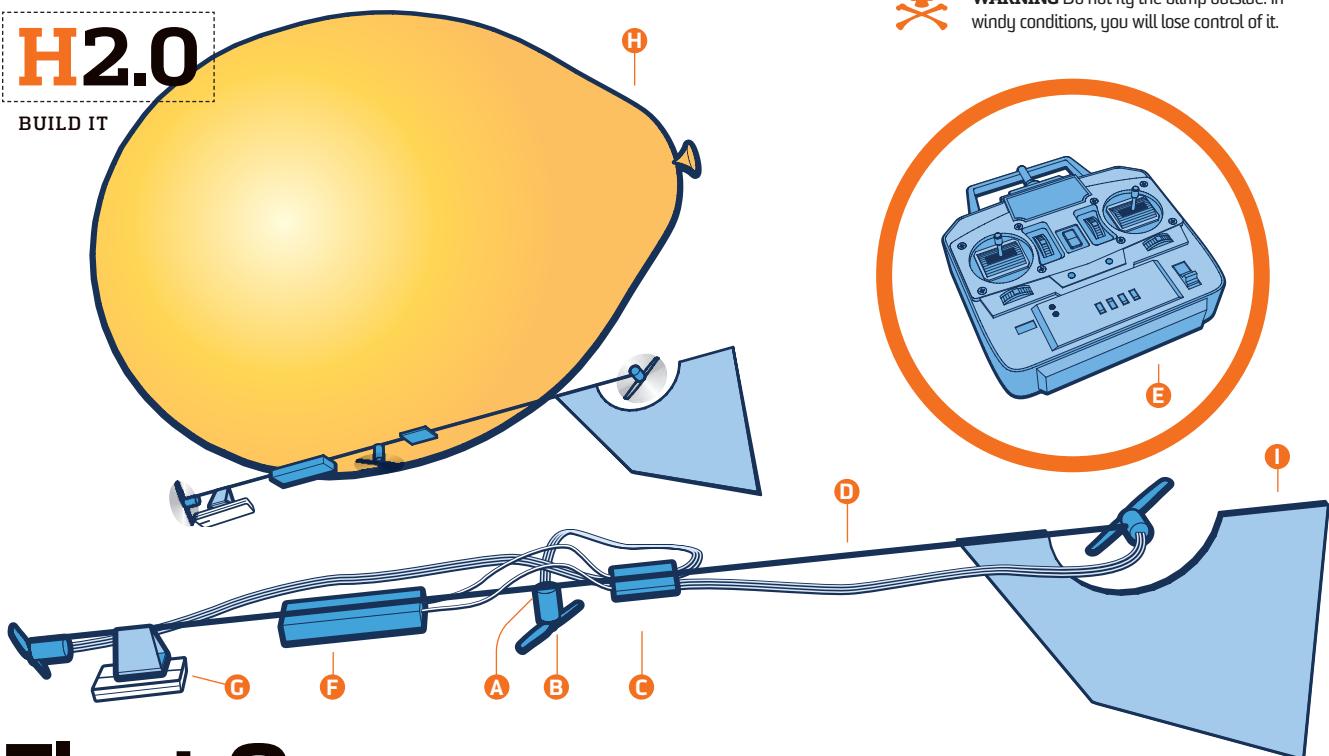


H2.0

BUILD IT



Float On

A remote-control spy blimp

STORY BY Yvon Masyn as told to Amanda Schupak

ILLUSTRATIONS BY Greg Maxson

I'm a materials-science engineer at an agency that allocates funding to research projects. It's theoretical work, so in my spare time I like to do practical, hands-on things. I've been building R/C models for 33 years and have always preferred uncommon vehicles—amphibious cars, submarines, hovercrafts—so indoor R/C airships are a good fit for me.

I built my first airship about 12 years ago, when relatively light R/C gear began to be more affordable. My newest toy is a helium-balloon blimp equipped with a miniature video camera. The craft is too conspicuous to do real surveillance, but it's lots of fun to fly and take aerial shots. It's also smaller than almost any off-the-shelf model and has a better combination of stability and maneuverability.

1. The propulsion system features three hacked servomotors [A]. Open the casing, discard the gears and pinion, and pull out the potentiometer and motor. Wrap the circuit board in Scotch tape to prevent a short.

2. Fit the shaft of each servo into one of the propellers [B].

3. The receiver [C] gets the signal from the remote. Cover it in tape and affix it to the middle of a foot-long carbon rod [D].

4. Using small rubber bands, mount the main forward/back propeller and its motor to one end of the rod, another propeller and motor perpendicularly at the other end, and the third propeller and motor at the rod's center of gravity, pointing down to control altitude. Check that the propellers are aligned at right angles and glue them in place.

5. The receiver has four channels, corresponding to the directions of motion

on the remote [E]. Plug each servo's connector into one of the sockets at the edges of the receiver to pair it with one of the directions. You can change the coupling to the configuration that feels most natural. Try pairing up/down movement with the throttle and forward propulsion with the elevator stick.

6. Stick a loop of Scotch tape a quarter of the way down the rod from the front propeller as a mount for the battery [F] that

powers the receiver and servos.

7. Remove an 808 car-key micro camera [G] from its key fob casing and fold a piece of thin Styrofoam-like Depron into a sling to hang it from the rod behind the front propeller. Aim the lens at the optimal angle, and keep the record button accessible.

8. Tape the assembly to a helium-filled 16-inch latex balloon [H]. You may have to adjust the assembly to balance

it so that the rod hovers parallel to the ground.

9. Fashion a tail fin [I] out of Depron, trimming out a semicircle to accommodate the back propeller and taping it to the rod. This helps the ship fly straight and protects the propeller from bottoming out when the craft lands.

10. Add putty toward the back of the rod so the blimp slowly sinks when the center motor and propeller are off.

R/C Airship

TIME 1 day
COST \$200
DIFFICULTY

EASY HARD

For full instructions and a list of parts, go to popsci.com/spyblimp.



WARNING Do not fly the blimp outside. In windy conditions, you will lose control of it.