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Coat Hanger ROV
A quick, easy-to-make, simple version of a remotely-operated vehicle

Think about the things every ROV – or any underwater vehicle – needs:

- 1) Structure
- 2) Flotation
- 3) Ballast
- 4) Power
- 5) Propulsion
- 6) Control
- 7) Navigation

Materials:

Structure – plastic coat hangers, electrical tape, and hot glue

Flotation – ping-pong balls or empty film canisters with lids

Ballast – nails or screws

Power – battery and telephone wire

Propulsion – motors and propellers

Control – chopsticks or wooden stirrers

Navigation – your sight

Tools:

hot glue gun – for most things, you can use tape to replace hot glue

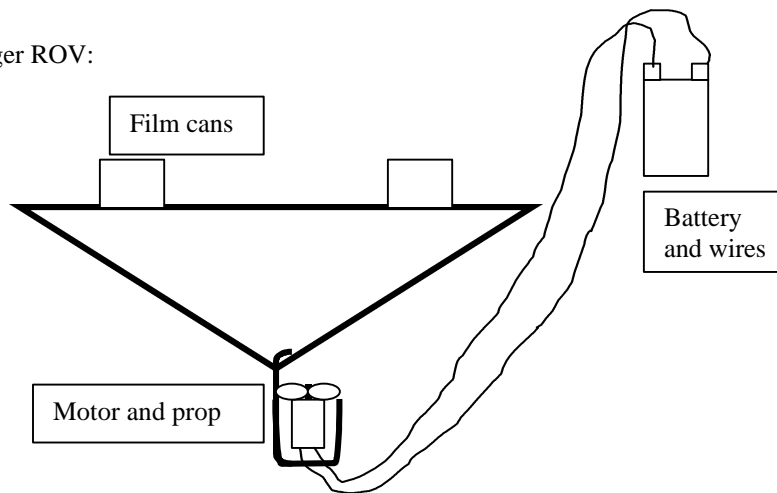
wire cutters/strippers – you can replace wire cutters with a kitchen knife

imagination

Instructions:

(see next page)

Coat Hanger ROV:



Parts

- Plastic coat hanger
- One electric 6 or 12-volt motor
- One propeller to fit the motor
- 10 feet of #28 AWG wire or equivalent (the wire can be telephone wires)
- One roll of electrical tape
- Two film canisters with lids
- 6 to 12 3" common nails or suitable weights such as 1/4" bolts
- One 6-volt lantern battery or 12-volt battery from two lantern batteries in series. This is dependant on the motor you use.

Construction

1. Take the single hanger and hold it so the hanger hook is down.
2. Tape the motor with the propeller facing up inside the hook.
3. Tape the two film canisters with lids on, to the upper part of the hanger.
4. Tape enough weights to the hanger, to allow the hanger to float right at the surface of the water.
5. Strip the insulation off of both of the wire ends about 1".
6. Twist one end of a wire to one terminal of the motor and twist the other wire to the other terminal of the motor. You can braid the wires together to make it neater.
7. Tape the other end of each wire to a stir stick or chopstick. Make sure that the non-insulated part of the wire is hanging over the end of the stir stick.

Now you are ready to dive the ROV.

Place in the water and touch one stir stick end to one battery terminal and the other stir stick end to the other battery terminal to power the motor.

Troubleshooting

If it doesn't sink you may try switching the polarity, which reverses the motor and prop direction.

If it still doesn't sink then you may need to tape some additional weights to the hanger.

Rules to remember

The floats must be above the weights and the ROV has to float before it sinks.

That's it. Have fun!

If you want something more complex then add a hanger to the structure and tape a couple of horizontal motors to it. Then figure out how to switch it on and off, etc... but this one is the simplest to do. It goes down and up. You can make variations. Do not run the motor in saltwater, or it will short out.