

# Boys and Girls...

This corner, all you young folks, is for you and your interests. This is where we tell you, week by week, about what is being put over the air for you, just as the grown-ups have their own pages with their own programmes. So make sure that you, too, "Look Before You Listen"

## HOW TO MAKE ELECTRIC MOTORS Mostly from odds and ends

By "Modelmaker"

**T**HE following is a brief summary of the discussions broadcast from IYA on the 5th and 12th September and the 3rd October on the building of electric motors. The plans and specifications of these motors were published in "The Listener" of 25th August, 1st September, and 29th September.

The only difference in the two motors is in the magnets. The first uses a magneto magnet and the other has the magnet cut from pieces of tin with a coil wound on it. The first is what is known as a permanent magnet motor and the second an induced magnet. As the armature, shaft, commutator, and brushes, etc., are suitable for either we will explain these first. Quite a number of the details are explained in the drawings in the magazines.

### Armature

Cut a pattern out of tin to the shape of the armature stamping. Use this for marking the other stampings from. Cut sufficient stampings to make a pile when clamped tightly together, three-eighths of an inch thick. Drill eighth-inch axle hole in the centre of each one. Cover one side only of stampings with shellac. Then dry thread stampings on to axle. See that they fit tightly on the axle. Put the stampings to, say, within an inch of one end of the axle. Drill holes through each of the legs of the armature and rivet together with small nails. File off all the rough edges. The armature should look like one thick stamping now.

See that the armature balances. Stick two or three layers of tissue or thin strong brown paper around the metal. The only part left uncovered is the outside rim or the three segments as they are called. Give this a liberal coating of shellac and allow to dry. Wind one hundred turns of the 28 enamelled copper wire round each leg of the armature. To do this wind about an inch of the end of the wire around the centre axle, just to anchor it whilst winding. Then carefully wind one hundred turns around one of the legs of the armature. You will probably get about thirty turns on the first layer. You could if you wish put tissue paper between each coil (layer). When the hundred turns are wound on make a twist in the wire about an inch long with a little loop in the end of the twist. **DON'T CUT OFF THE WIRE.** Tie some cotton around the coil to hold the windings in position whilst you wind the next coil. Wind on the next hundred turns and in the same direction. Then twist and loop. Tie with cotton. Then the last hundred turns. When this last hundred turns is wound into place and tied down cut off the wire with about an inch to spare.

Twist this together with the wire that you twisted around the axle when you commenced to wind the armature. Don't forget to unwind the wire from around the axle before you twist it together with the other one. Whatever you do make sure that all your armature windings are in the same direction. That is, if your first winding is made from left to right around the leg, then each of the windings **MUST** be from left to right. When you have wound the armature give it a liberal coating of shellac.

### Testing The Armature

Scrape the insulation from the ends of the three twists. Hold one wire from a battery against one of these ends of the twists and with the other wire from the battery scrape the axle. If no sparks appear then everything is correct. If sparks appear it means that you have cut through your paper insulation with your windings. You will have to re-wind your armature if this has happened, so make very sure when you are filing your metal smooth in the first place that you take off all the sharp and rough edges. (These instructions will be concluded next week)

### FOR YOUR ENTERTAINMENT NATIONAL STATIONS

**MONDAY, 5-6 p.m.**  
2YA: Talk by "Ebor" on Nick-names  
3YA: Stamp Club



Some broadcasts in the Children's Hour are made from funny places. This is Aunt Elizabeth of the BBC telling the children what it feels like to have an elephant ride at the Zoo

3ZR: Legends of Umboğu  
4YZ: Toyshop Tales (5.30 p.m.)

**TUESDAY, 5-6 p.m.**  
2YA: Play by Isobel Halligan's pupils

**WEDNESDAY, 5-6 p.m.**  
2YA: First broadcast programme by crippled children  
4YA: Travel Man

**THURSDAY, 5-6 p.m.**  
2YA: Games Night

**FRIDAY, 5-6 p.m.**  
2YA: Talk about Baby Whales by Mr. Jackson the Whaler  
4YZ: Toyshop Tales  
**SATURDAY, 5-6 p.m.**  
2YA: Pantomime by Evelyn Goldsmith and Company  
3YA: Riddleman — Eyes of the World

**COMMERCIAL STATIONS**  
"The Lone Ranger." All ZB Stations.  
7 p.m. Wednesdays, Thursdays, and Saturdays

## OBADIAH OSWALD

By Mary C. Hall



Obadiah Oswald is a prickly little beast, With a rather trying temper if you tease him in the least. He's a serious young fellow, and never wants to play. He keeps his nose upon the ground and walks a funny way. Obadiah Oswald is a baby porcupine, And although he is so prickly, I would love him to be mine. I wouldn't try to stroke him, or play with him at all. I'd let him put himself to bed, rolled up into a ball. But I'd feed him on the kind of things a porcupine likes to eat. I'd make him very happy, and keep his home quite neat. And although he is so prickly, I might be prickly too, If I just had to look at life from Oswald's point of view.

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