

"plop" when the condenser is turned slowly, is detrimental, and should be remedied.

The aerial should be kept taut. Fading may be caused by a swaying aerial.

As few as 50 turns of 30's wire may be used for an H.F. choke, but 100 turns appears to suit the average set.

In dealing last week with the rotating aerial coil for the short-wave adapter, mention should have been made of reducing the number of secondary turns as well as the primary. However, the correct turns for 30 metres appeared at the end of the article, making the complete combination quite clear.

The best resistance to use across the tickler in the short wave adapter is a Centralab, which is a very high resistance with a maximum of 500,000 ohms. The resistance has a connection at both ends and a variable tap in the form of a rotating arm. The resistance itself consists of a composition, and gives remarkably smooth action. It is really a potentiometer of unusually high resistance. Some short wave enthusiasts say that this method of control beats a condenser. The resistances sell at about 11s. 6d.

Signals are very often classified as to volume by the numbers R1 to R9, the former indicating extremely weak reception, and the latter very strong signals. There is no absolute authority on the subject, but the usual classification is as follows:—R1, extremely weak and almost inaudible; R2, audible, but not strong enough to read all the time, the slightest fading or disturbance being enough to drown the signal; R3, just readable, but with difficulty; R4, quite clear and readable; R5, fairly strong; R6, strong; R7, signals loud; R8, very loud (i.e. "small loud-speaker strength"); R9, extremely loud.

Under the new United States radio regulations several broadcast stations are licensed for only the daylight hours and others are authorised to use higher power before 7 p.m. The Radio Commission has announced that it is desirous of encouraging higher-power work in the daylight hours, though curtailing power during the night hours, when the interference range is much greater.

NOISES FROM BATTERIES

Many of the noises in a radio set can be traced to loose connections. Because these noises resemble static it is seldom that any other source for them is thought of. Poor battery connections cause more "static" than any other one thing. Storage battery connections should be made by means of a clip which can be made to grip the terminals of the battery. Before connecting to the battery each terminal should be given a medium coating of white vaseline. This prevents corrosion. It is preferable that the B battery connections also be made by means of a smaller clip than used on the storage battery; these clips should have a strong gripping power.

Oftentimes the inexperienced listener will pass over distant signals through haste. Many distant stations have fading signals. The signal fades in and out at irregular intervals. If you happen to strike a signal from one of these stations when it is at its weakest point you are apt to consider it too weak to bother with and pass along. When you strike even the faintest of whistles, nurse it along. It may gradually develop into a strong signal. Tune on to it and stop there. When this is done keep the hands off the dials for a minute or so. It is very likely the signal will come in with good loud-speaker volume.

As the result of a series of experiments conducted by radio stations between England and the Continent, the Welsh language is said to be best for broadcasting. It has been found that its euphonisms and alliterative sentences are not only pleasing to the ear, but very easily received by the microphone.

Seventy-five thousand questionnaires have been sent out by the Edison Company from which it is hoped the musical tastes of radio listeners may be accurately ascertained. The answers received will be utilised in preparing musical programmes to be broadcast from WJNY, New York.

WHAT ACCUMULATOR SHALL I USE?

This is a question that a good many prospective set-owners are considering, and much depends upon getting a correct answer. To purchase an accumulator without knowing how long it will last upon your set before requiring recharging is obviously unwise; but if the following simple rules are borne in mind, there is no need to rely upon other people's opinion, for you can work out accurately what type of accumulator is required, and how long it will last.

The current which a valve takes out of an accumulator is reckoned in amperes. Some of the bright-emitter valves take half an ampere or more to light them. Other valves of the semi-dull emitter type take about a quarter of an ampere, whilst the most economical type of all are the ".06's," which, as their title implies, take only six-one-hundredths of an ampere—i.e., three-fiftieths.

A Simple Calculation.
When several valves are used at once, their respective current consumptions must be added together, to find out how much current the set will need. For instance, three of the .06 type will take a total of .18 ampere, whilst two valves, each taking .25 ampere, followed by a power-valve taking, say, .5 ampere, would take a total of one ampere (more than five times as much).

As every valve-maker indicates the valve's current-consumption upon the valve-box, it is a very easy matter to determine the current required by any given number or type of valves. Then simply multiply this figure by the number of hours which the accumulator must run without recharging, and you have arrived at the class of accumulator which is required. To make this perfectly clear, let us take the case of a four-valve set, which is to be work-

ed from, say, Cossor Wuncells. We will assume the owner lives in the country and can only charge his accumulator once a fortnight, and that he will use the set for an average period of four hours per day.

Determining Required Capacities.
Consulting the valve-maker's specification, we find that each valve is rated at .25 ampere, so that four valves will consume a total current of one ampere. We have to multiply this by the number of hours which the accumulator must run without recharging, in this instance 14 x 4 = 56. The required accumulator, then, must deliver one ampere for 56 hours—i.e., it must have a capacity of at least 56 ampere hours. The nearest obtainable figure would be 60 actual ampere hours, which would just give a little necessary margin.

If the set had been only a two-valve set, the figures would have been halved, the figures in this instance being .25 x 2 (= .5), multiplied by 56, = 28 actual ampere hours.

Our final example, worked in the reverse direction, will make the principle perfectly clear. How long would a 20 actual ampere hour accumulator last without recharging, if used upon a set employing two bright emitter valves, each rated at .7 ampere?

The total current required by the set would be 1.4 amperes, and this number must be divided into the 20 actual ampere hours of the accumulator, as follows:—

$$\frac{20}{1.4} = 14.28$$

This shows that the accumulator would only last about fourteen hours without recharging, so an accumulator with a greater capacity would be necessary, or, better still, dull-emitter valves should be employed instead.

The Children's Corner

By "ARIEL"

Dear Radio Children,—Here is just one more animal for our Zoo, which is growing fast and furiously. This time it is a Faydout, rather a difficult animal to catch and get on to paper, but Ronald Sutton managed to get a lovely one for us, so, of course, he has the prize. Mervyn Jillings, too, sent in a very good specimen, but we haven't room for more than one at a time. However, I am keeping him safely tucked away, as he is too good to lose altogether. This very next animal is to be a "Squealer." As I told you before, he is a first-cousin to the "Howler," but is a thinner kind altogether—in fact, very much inclined to be scraggy. I want him by October 19, and after that I think a "Surprise" would make a nice Zoo inmate, don't you? He has big, wide-awake eyes, and comes in with a bounce, just when you least expect him. He often comes in the Children's Hour and is usually in a pleasant frame of mind then. Of course, he can be very unpleasant at times, and has a funny way of giving quite a nasty little jar. I heard of two boys who were always fighting, till one night a Radio Uncle called them over the air and requested them to give it up at once. He sent them a Big Surprise, didn't he? They were so startled that they have not had a single fight since!

Are you all busy writing stories and poems? Don't make them too long—just little ones, like the examples I gave you, are best.

Don't you all love the out-of-doors just now? The trees are looking so fresh and green, and everything seems glad that Winter has really gone at last. There is a little fat round kitten basking lazily in the warm Spring sunshine on the steps just outside my window. She is having a lovely game with a lizard, but I don't think the lizard is altogether enjoying himself. You see, he has to keep perfectly still, because every time he dares to move, kitty gives him a playful pat with her paddy paw. I wish he would gather up his courage and make a bid for freedom.

Goodbye till next week.—ARIEL.

OUR WIRELESS ZOO—No. 4: THE FAYDOUT

Here we have the "Faydout" to add to our collection of wireless animals. He was drawn by Ronald Sutton, 63 Dublin St., Invercargill, who wins the prize this week.



THE FAYDOUT.

Howler makes his presence felt,
With noise both loud and grim;
Smiler makes the moments melt,
With no such ugly din!

But who comes here so noiselessly,
Just creeping in and out?
One moment here! One moment there!
FAYDOUT! FAYDOUT!! FAYDOUT!!!
—Ronald Sutton, Invercargill.

COMPETITIONS

1. Our Wireless Zoo.
(1) "Squealer" and verse; closing date, October 5. Prize, 5s.
(2) "Surprise" and verse; closing date, October 19. Prize, 5s.
2. The Best Story; closing date, October 12. Prize, a book.
3. The Best Poem; closing date, October 19. Prize, a book.

MASTER RAY ARNOLD

We have an apology to make to little Ray Arnold, of Danedin, whose photograph appeared in our Corner quite recently. He was stated to be twelve years old, and he is really only nine. Now, three whole years make a big difference to such a little boy, and, being so much younger than we thought, makes his performance all the more wonderful, doesn't it?

ANSWER TO DOUBLE ACROSTIC.

1. S a C
2. A b L
3. N o A
4. T h U
5. A l S

Solution: Santa Claus.

RIDDLES

1. Why did the enamel bath?—Because it saw the white wash.
2. Why do rabbits have shiny noses?—Because their powder puffs are at the other end.
3. What can't the bear bear?—To hear the crow crow.
4. Why did the coal scuttle?—Because the poker would poke 'er.
5. What fish do birds like?—A perch.
6. What is it we never borrow, yet often return?—Thanks.

LIMERICKS

There was a young lady of Crewe
Who wanted to catch the 2.2.
Said a porter, "Don't hurry
Or flury, or scurry,
It's a minute or 2 2 2.2."

In science our master has power
To lecture his class by the hour.
He can tell to a grain
The amount of the rain
We shall have in the very next shower.

There was an old woman of Worcester
Who was very much peeved with her rooster.
She cut off his head
And killed him quite dead,
So now he can't crow like he useter.

There was a fine fellow named Tait,
Took a lady to dine at eight-eight;
I cannot relate
What that young man named Tait
At his tete-a-tete ate at eight-eight.

There once was a fisher called Fischer,
Who fished for a fish in a fissure;
But the fish with a grin
Pulled the fisherman in;
Now they're fishing the fissure for Fischer.

Mused a badger, "There's much in a name!
Take by own, for example—I blame
Those who labelled me bad,
No sound reason they had,
For to live like a goodger's my aim.

A Cheshire Cat grinned for a day,
For a week, for a month, so they say.
Then he started to frown,
For a dog of the town
Chased the smile (and the smiler) away—

Of Course.

"What's that space without any printing in it for at the bottom corner?" "Why, that's for the folk who can't read, of course."

VERSES ABOUT THE FAYDOUT

When you are tuning your radio set,
You'll think you've tuned it wrong,
But you'll find who's caused the fading
And so spoiled every song.
Oh! He's such a jealous thing,
He's sure to spoil the fun—
If we could only catch him now,
How we'd make him run!
He is a very silly chap
To be such a disgrace,
Let's put him under the wash-house tap!
That is his proper place.
—Tom May, Hastings.

Hear Master Faydout, dancing up and down,
Making all the listeners strain their ears
And frown;
He surely is the most unwelcome guest,
For when he comes he quite spoils all the rest.
—Lionel Hodgson (age 9), Pictou.

When we tune in 2YA,
Whether in the night or day,
In comes the Faydout
And flies round about.
I wish he would come a little nearer;
I'd tie him up and get music clearer.
—Mervyn Jillings (age 7), Hastings.

AN UNLICENSED LISTENER

The following interesting, but pathetic, little story of the wireless age is taken from the "Children's Newspaper." It tells of the love of a seal for music, and of the great trust dumb animals have in man, who, unfortunately, does not always prove himself worthy of the trust.

One night, in the full moon, there was a party in a house in a little town in the lonely Orkneys.

It was one of those nights when islanders feel that dwellers in cities on the mainland can scarcely be said to be alive. The moon shone on the great Atlantic rolling softly up to the harbour wall, on the houses of the little town, on the lonely island stretches, and drenched them in a silver, magic light.

Presently out of a house whose garden ran down to the grey sea-wall and the shining sea came a sound of marvellous music. The host was the delighted owner of a multi-valve wireless set, and he had called up a London band to make melody for the dancers in that moonlit house in Britain's Far North.

Shining in the Moonlight.

The windows were open, and out over the sea floated the rhythmic strains. From end to end of the harbour, in all the seaboard homes, this music could be heard, and what it meant, the bewitching spell of sound and dance combined, can only be understood by those who know how wearying is the monotony of daily life in lonely places.

After a while the moonlight called some of the dancers down to a walk on the sea-wall. The throbbing music followed them as they went, laughing and talking. Suddenly someone pointed to something in the harbour, and said, "What is that?"

It was a queer object that moved occasionally, shining in the moonlight on one of the lobster boxes that float in the harbour. Could it be a man? No, it was too small. It was a seal held spellbound by the music. The dancers went tiptoeing back indoors lest they should break the magic, and left the listener in the harbour. They knew how much seals love music of any kind, how they will follow boats where there is a fiddler or a whistler on board.

The Lonely Listener.

The next night, when the loud speaker was going, they tiptoed out again and saw the seal on the same box, listening. He became to them a friend, and they determined to protect this uninvited guest from the great seas.

As the days went by the seal learned, to his surprise, that the harbour was a safe place. It was against all his instincts to believe this, for the coast meant danger and the ocean safety. He began to come in the daytime, longing for the magic sounds to creep down out of that house whose garden ran down to the sea-wall. Some boys tried throwing stones, but they were quickly stopped. It was understood that the lonely listener-in had to be left unmolested.

A Man of Death.

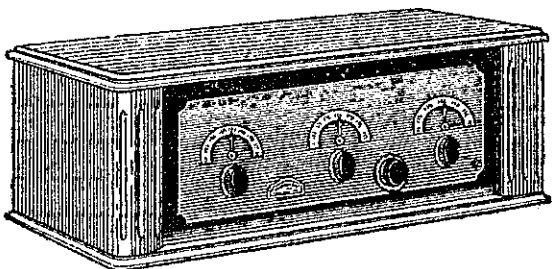
'Alas for human kindness! Alas for a wild creature's trust in man! There was a man of death not far away, watching that seal with a gloating eye and a heart of steel. He could not see a creature of the wild without wanting to kill it. There came a day when the friends of the seal ran down to the harbour and saw him stretched lifeless on the box.

Someone had made a sly and easy shot at a defenceless animal that had learned to trust human beings and allow itself the rapture of the music they made. We hope the man who used that gun will read these lines, will learn in what scorn he stands in the eyes of the world, and will throw his gun where it should go—into the depths of the sea.

Cruel Man!

A little girl for the first time heard a Highlander playing bagpipes in the street. Much upset, she ran home and cried, "Oh, mummie, I've just met a horrid man squeezing something under his arm, and he's hurting it terribly!"

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