

How to Become a Radio "Reception" Prophet

CONTINUED FROM FRONT PAGE

air contains, compared with what it could contain if saturated at the given moment. With the help of thermometer and hygrometer, we can forecast static still more effectively, with the aid of these pointers:

1. If the barometer reads above 30 inches and has been rising during the preceding twelve hours, and if the temperature and relative humidity are falling, static is not likely within the next twelve hours.

2. If the barometer reads below 30 inches and has been falling during the preceding twelve hours, and the temperature and relative humidity are rising, static will prevail during the next twelve hours.

3. If the barometer is constant while the relative humidity falls, static is likely to reduce in tensify if it has been current.

4. If the barometer is constant while the relative humidity rises, static may increase if it has been current.

5. If the relative humidity and temperature remain constant while the barometer rises or falls, a change

from the prevailing intensity of static will be effected less quickly than if the relative humidity and temperature changed as indicated in statements (1) and (2).

The reader is cautioned here not to take these statements too literally. They represent merely guides to probable occurrences, and will occasionally be found to be inaccurate, because quite exceptional atmospheric conditions happen from time to time. For example, there are times when the barometer is high, that is, above 30 inches, but begins to fall while the relative humidity rises. It may not yet have reached 30 inches when rain or snow begins, yet static will not make itself known. At all times pressure is the dominant influence, while temperature and relative humidity, if operating according to rules 1 to 2, merely help to strengthen the forecast which the pressure-change indicates.

A POPULAR FALLACY.

THESE last statements call attention to the popular misconception

that whenever it rains or snows static will be prevalent. This is not at all true. The writer has experienced some of the best reception during such storms, but in these instances atmospheric pressure was higher than is customary when rain or snow occurs. On the other hand, much static has been experienced on some clear nights under high pressure conditions, when on these occasions abnormally high relative humidity was accompanied by a sudden drop in temperature. Since these cases are exceptional, although not always rare, perhaps we should not allow them to impress us too strongly.

OPPORTUNITY FOR INVESTIGATION

WHILE we have attempted here to suggest a simple instrumental method enabling the average person to forecast for himself the probability of static, we refer again to the utilisation of the daily weather map by those desirous of making a detailed study of the whole problem.

The writer has found many relationships between the location of the receiving and sending stations with respect to the extent and intensity of a high or low pressure area, and the probability of static. The details cannot be presented here, but a few major conclusions may be noted. (By way of explanation of the term isobar, the reader is referred to the map on which he will see concentric lines outlining high and low pressure areas. If these are close together the pressure is intense or strong, but if far apart it is weak. If close together, the pressure area as a unit moves more rapidly than when the isobars are far apart. Any line drawn at right angles across a series of isobars indicates the isobaric gradient.)

Here are some conclusions drawn from a study of these maps:

1. If a line connecting the receiving station with the broadcasting station crosses the intervening isobars at right angles, reception is at its best.

2. The steeper the isobaric gradient (that is, the closer the isobars to each other), the stronger the reception.

3. The more nearly the transmitted waves approach parallelism with the isobars, the weaker the reception. Under these conditions fading occurs.

4. Reception is weaker when the transmitted waves cross from one pressure area into another than when they travel only within one area.

5. Reception is better in winter than in summer because the cyclones (Lows) and anti-cyclones (Highs) are more intense in the winter period.

6. Shallow or flat pressure areas favour much static.

We need more investigation in the field of the relationship of static to atmospheric conditions. Here is an opportunity eminently worth while for both the experimenter and fan.

AS an aid towards minimising "mike" fright, the British Broadcasting Company has tried converting its studio into a small theatre, complete with audience and spotlights. The system is said to be a success.

PHOTOGRAPHS BY TELEGRAPHY

A DREAM COME TRUE.

The "Daily Sketch" and its allied newspapers will shortly install between London and Manchester an apparatus for the transmission of photographs by telegraphy.

The plant and apparatus are now under construction, and in the near future the photograph of an interesting and important event in London will be available in Manchester in a few seconds, eliminating the time lost in railway transit and the limitations of aeroplane delivery, now frequently employed in order that the reader may have the latest news in pictures in the next issue of his paper.

Within almost an hour of an event occurring in London it will be possible to have a picture printing in the Northern editions of the "Daily Sketch" in Manchester, an achievement which has not yet been possible in this country.

Dream of Years.

The rapid transmission of photographs by telegraphy is an achievement of which scientists, engineers and newspaper producers have been dreaming for years, a feat on which they have been working as well as dreaming, and the fulfilment comes in an instrument which produces the most remarkably accurate results.

The "Daily Sketch" and its allied newspapers are installing this newest development of photo-telegraphy, and placing its work and possibilities at the service of its readers. Events the world over will be brought nearer in visualised form.

The Post Office have under consideration the institution of a photo-telegraphic service between London and the Continent, linking up with the system now working between Vienna and Berlin.

A Glimpse of the Future.

It is a reasonable possibility that within a few years it will be as easy to transmit a photograph by wire as it is to send a telegram between the capitals of the world.

Photo-telegraphy will be a valuable addition to the great news and picture collecting organisation at present used by the "Daily Sketch" and its allied journals. Between Manchester, London, Newcastle, Glasgow, and Sheffield, and other towns, there already exists an enormous network of special telephone and telegraph lines, the largest private installation of its kind in any newspaper organisation in the country, linking up the industrial hub of the nation with almost every part of the country.

RADIO WET A BATTERIES

VOLTS AND AMPERES.

While there are exceptions, the standard type of "A" battery is that known as the "wet" or "storage" type. These vary little from those used as starting and lighting batteries in motor-cars, except, in general, the plates comprising them are not as thick or rugged as those designed for motor-cars.

Their voltage should never exceed 6.7 volts, and probably the most popular capacities are the 100 or 120 ampere hour batteries. "A" batteries do not require a high voltage output, but do require a current (amperes) value capable of supplying around two to three amperes of current per hour for the operation of the receiver.

The 100 ampere hour size has thus become popular for multi-valve sets because it will supply that average radio receiver with current for a period of about two weeks before requiring recharging. This period is not definite, but rather an average, it being essential that until one has determined from frequent tests the approximate period when the "A" battery needs recharging, that a free use of a battery "hydrometer" be made.

MOVIE stars are great radio fans, it would appear from a check made of the Los Angeles "Evening Express" station, KNX, telephone calls. At least 25 per cent of the hundreds of calls that come in requesting favourite pieces are from motion picture actors and actresses.

IN spite of some opposition, the work houses, one by one, throughout England are being equipped with broadcast receivers. The latest is at Chesterfield, where the Guardians have decided to install apparatus in the infirmary and workhouse at an estimated cost of £200.

DID you know that though 1 metre has a frequency of 300,000 kilocycles, 30,000 metres has only a frequency of 10 kilocycles?

THE coupling condensers for resistance capacity or choke amplifiers should be of the mica type.

ELECTRICAL INTERFERENCE

X-RAY, VIOLET-RAY, MOTORS, ETC.

Broadcasting is being taken seriously in America. The latest evidence of this is the action taken by many of the municipal authorities in the United States of America to prevent interference with programmes by induction noises from electrical machinery. One town has just gone so far as to prohibit the use of electrical machinery likely to cause interference with wireless reception between 8 o'clock and 10 o'clock at night. The order has been made very comprehensive, and it provides, among other things, that hospitals must not use their X-ray plants between these hours except in cases of emergency.

Although listeners do not always realise it, electrical machinery causes a great deal of interference with broadcast reception. A simple proof of this can be obtained by turning on the electric light in a room in which a receiver is operating. As the switch is closed a loud click will almost invariably be heard in the loudspeaker.

Various Causes.

Electric motors, such as those used to drive electric fans, are great offenders, and produce a continuous noise in the speaker. This noise is seldom troublesome if one is receiving loud local stations, but it will often prevent long-distance reception. Violet-ray machines cause even more intense interference, and one of the worst offenders of all is the battery charger used by amateurs themselves. For this reason battery chargers, particularly those of the vibrating reed type, should be used as little as possible in broadcasting hours. There are other sources of electrical interference which can seldom be controlled. These are various forms of defects, usually leaks which develop in the insulating material, on the reticulation service itself. The only effective means of overcoming this interference appears to be to provide broadcasting stations so powerful that they will entirely drown the interference. This is quite possible over short distances, but impossible over long distances, and it seems that, for the time being at any rate, listeners must suffer a certain amount of interference from electrical services.

SOLDERING LITZ WIRE

REQUIRES MUCH SKILL.

Litz wire, frequently employed for making indoor loop aerials, is very difficult to handle, and soldering it, in the hands of the average amateur, becomes an impossible task, unless considerable patience and a fair amount of skill is applied. This is the way this, or any other standard wire, should be dealt with.

For a half an inch or so from its end it should be carefully unravelled and each strand cleaned separately. Gently scrape with a sharp knife each tiny wire until it is clean. Do not use force or endeavour to hasten the operation, for if you do the wire will break. If the wires are enamelled the operation may be a long one, but if the job is to be satisfactory it will have to be carried through.

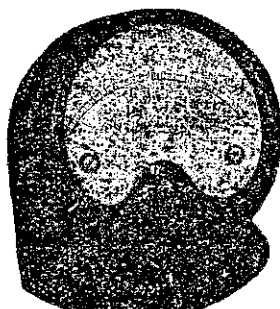
Care Needed.

Next cover each strand very carefully with flux. Having done this, gently twist the whole lot together again, taking care not to rub the flux off with the fingers. Twist them up very carefully, but tightly, together with a pair of pliers, the jaws of which have previously been cleaned. Next get the bit of the soldering iron well cleaned and tinned. On one face of the soldering-iron bit get a large bead of molten solder, and in this place the end of the Litz wire. Hold it there for two or three moments and then withdraw it, and you will find that it is successfully welded together by means of a mass of permeating solder. You can now proceed to join it to a soldering tag or other such point in the usual way, confident that a strong connection will result.

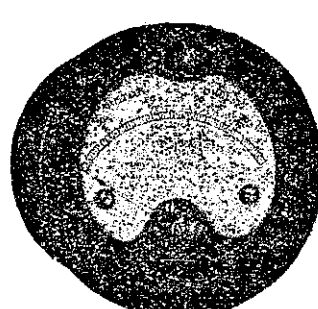
FERRANTI RADIO COMPONENTS



PROJECTING TYPE METER
Milliammeter £1/12/6 each
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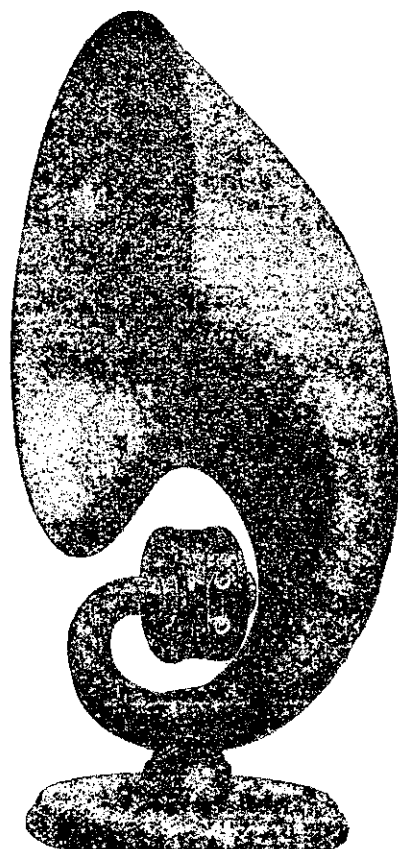
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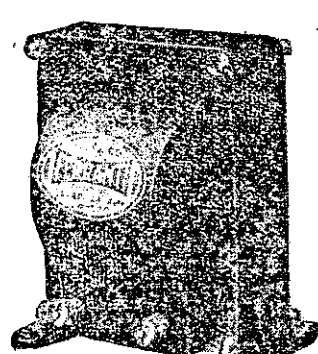
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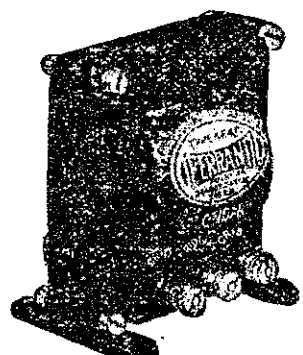
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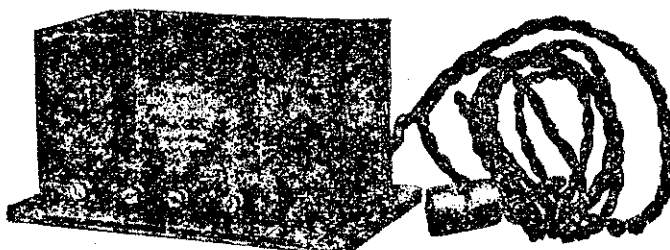
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